

CLAIMS

What is claimed is:

1. A method of forwarding data traffic in a packet-switched network, the packet-switched network further comprising a plurality of virtual networks defined thereon, comprising the steps of:
 - (a) receiving data traffic with a destination address;
 - (b) where the destination address is a local address in the packet switched network, forwarding the data traffic using destination-based routing; and
 - (c) where the destination address is not a local address in the packet-switched network, policy filtering the data traffic and, based on the policy filtering, mapping the data traffic to one of the plurality of virtual networks.
2. The method of claim 1, wherein the packet-switched network is connected to a plurality of service networks and wherein one of the plurality of virtual networks defines one or more routes for the data traffic to one of the plurality of service networks.
3. The method of claim 2, wherein data traffic from a service network and with a destination address in the access network is forwarded through the packet-switched network using destination-based routing.
4. The method of claim 1, wherein the data traffic is mapped using a label switching protocol.

5. The method of claim 4, wherein the label switching protocol is MPLS.
6. The method of claim 2, wherein the policy filtering is based on information in a packet header.
7. The method of claim 6, wherein the policy filtering is based on a source address in the packet header and wherein source addresses are associated with subscribers to services provided by the service network.
8. The method of claim 7, wherein the networks utilize the Internet Protocol and wherein the address are Internet Protocol addresses.
9. The method of claim 2, wherein the service network is operated by a different service provider than the packet-switched network.
10. The method of claim 1, wherein the packet-switched network comprises a hybrid fiber coaxial network.
11. A method of forwarding data traffic in a packet-switched network, the packet switched network further comprising a plurality of virtual networks defined thereon, comprising the steps of:
 - (a) policy filtering data traffic entering the packet switched network;

(b) where the data traffic has a destination address that is a local address in the packet-switched network, mapping the data traffic to a first of a plurality of virtual networks that defines all local routes in the packet-switched network; and

(c) where the data traffic has a destination address that is not a local address in the packet-switched network, mapping the data traffic to a second of a plurality of virtual networks that defines one or more routes in the packet-switched network to another network connected to the packet-switched network.

12. The method of claim 11, wherein the packet-switched network is connected to a plurality of service networks and wherein one of the plurality of virtual networks defines one or more routes for the data traffic to one of the plurality of service networks.

13. The method of claim 12, wherein data traffic from a service network and with a destination address in the access network is forwarded through the packet-switched network using the first of the plurality of virtual networks.

14. The method of claim 11, wherein the data traffic is mapped using a label switching protocol.

15. The method of claim 14, wherein the label switching protocol is MPLS.

16. The method of claim 12, wherein the policy filtering is based on information in a packet header.

17. The method of claim 16, wherein policy filtering is based on a source address in the packet header and wherein source addresses are associated with subscribers to services provided by the service network.

18. The method of claim 17, wherein the networks utilize the Internet Protocol and wherein the addresses are Internet Protocol addresses.

19. The method of claim 12, wherein the service network is operated by a different service provider than the packet-switched network.

20. The method of claim 11, wherein the packet-switched network comprises a hybrid fiber coaxial network.

21. An apparatus for forwarding data traffic in a packet-switched network, comprising:

(a) a forwarding table specifying local addresses in the packet-switched network;

(b) a policy filter for associating data traffic with one of a plurality of virtual networks; and

(c) a packet processor that chooses destination-based routing for data traffic destined for local addresses specified in the forwarding table and, for data traffic destined for addresses not specified in the forwarding table, that executes a policy filter decision on the data traffic and maps the data traffic to a virtual network based on the policy filtering decision.

22. The apparatus of claim 21, wherein the packet-switched network is connected to a plurality of service networks and wherein one of the plurality of virtual networks defines one or more routes for the data traffic to one of the plurality of service networks.

23. The apparatus of claim 21, wherein the data traffic is mapped using a label switching protocol.

24. The apparatus of claim 23, wherein the label switching protocol is MPLS.

25. The apparatus of claim 21, wherein the policy filtering is based on information in a packet header.

26. The apparatus of claim 25, wherein the policy filtering is based on a source address in the packet header and wherein source addresses are associated with subscribers to services provided by a network connected to one of the plurality of virtual networks.

27. The apparatus of claim 21, wherein the networks utilize the Internet Protocol and wherein the addresses are Internet Protocol addresses.

28. The apparatus of claim 22, wherein the service network is operated by a different service provider than the packet-switched network.

29. The apparatus of claim 21, wherein the packet-switched network comprises a hybrid fiber coaxial network.